

## **REMARKS**

### **I. Claims**

Claims 1 to 8 and 10 are pending in the present application. Claim 9 has been canceled. Claims 1 and 10 have been amended. Applicants would like to thank the examiner for the indication that claim 10 contains allowable subject matter. In response, claim 10 has been rewritten in independent form to include the limitations of the base claim 1 and the intervening claim 9.

Claims 1, 2, and 4-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,196,757 ("Omatsu"). Claims 7 and 8 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,845,399 ("Yasuda et al."). Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Omatsu.

Applicants respectfully request the Examiner to reconsider the above-captioned application in view of the above amendments and the following remarks.

### **II. Claims 1, 2, and 4-6 are not anticipated by Omatsu**

Claims 1, 2, and 4-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Omatsu. In support of the rejection, the Examiner notes that "With respect to claims 1, 2, 4 and 9, the reference discloses a piezoelectric ceramic body comprising a laminated PZT structure 1 and internal electrodes made of AgPd 2 and PZT. With respect to claim 5, the reference discloses in line 35 of column 5 70% Ag. With respect to claim 6, fig. 3 discloses less than 50% volume of PZT." It is respectfully submitted that the pending claims are not anticipated by Omatsu for at least the following reasons.

To anticipate a claim under § 102, a single prior art reference must identically disclose each and every claim element. See Lindeman Machinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458 (Fed. Cir. 1984). If any claimed element is absent from a prior art reference, it cannot anticipate the claim. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). Anticipation requires the presence in a single prior art reference disclosure of

each and every element of the claim invention, arranged as in the claim. Lindeman, 703 F.2d 1458 (Emphasis added).

As amended, Claim 1 recites that "the internal electrodes include a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals." Even if the Examiner is correct that Omatsu teaches "a piezoelectric ceramic body comprising a laminated PZT structure 1 and internal electrodes made of AgPD 2 and PZT," Omatsu fails to teach internal electrodes which include a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals. Hence, as amended, claim 1 is not anticipated by Omatsu.

In view of the above discussion, Applicants respectfully submit that Omatsu does not anticipate claim 1 and its dependent claims 2 and 4-6. Withdrawal of this rejection is respectfully requested.

### **III. Claims 7 and 8 are not anticipated by Yasuda et al.**

Claims 7 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Yasuda et al. reference.<sup>1</sup> In support of the rejection, the Examiner notes that "[t]he reference discloses in fig. 1 a laminated piezoelectric structure and inner electrodes with silver and FE or Ni of less than %Mol." It is respectfully submitted that the pending claims are not anticipated by Yasuda et al. for at least the following reasons.

To anticipate a claim under § 102, a single prior art reference must identically disclose each and every claim element. See Lindeman Maschinenfabrik v. American Hoist and Derrick, 730 F.2d 1452, 1458 (Fed. Cir. 1984). If any claimed element is absent from a prior art reference, it cannot anticipate the claim. See Rowe v. Dror, 112 F.3d 473, 478 (Fed. Cir. 1997). Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claim invention, arranged as in the claim.

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<sup>1</sup>The Examiner states that "[c]laims 6 and 7 are rejected," but the actual discussion of the rejection refers to elements of claims 7 and 8.

Lindeman, 703 F.2d 1458 (Emphasis added).

Even if Yasuda et al. reference did teach "a laminated piezoelectric structure and inner electrodes with silver and FE or Ni of less than %Mol," Yasuda et al. reference fails to teach internal electrodes which include a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals, as recited in amended claim 1, from which claims 7 and 8 ultimately depend. Since claims 7 and 8 ultimately depend from amended claim 1, the above argument regarding claim 1 applies equally to claim 7 and 8, and Yasuda et al. reference fails to anticipate claims 7 and 8. Therefore, withdrawal of this rejection is respectfully requested.

**IV. The Rejection of Claim 3 under 35 U.S.C. § 103(a) should be withdrawn**

Claim 3 stands rejected under 35 U.S.C. § 103(a). It is contended that this claim is unpatentable over Omatsu. Applicants respectfully submit that this rejection should be withdrawn for at least the following reasons.

In order for a claim to be rejected for obviousness under 35 U.S.C. § 103(a), not only must the prior art teach or suggest each element of the claim, but the prior art must also suggest combining the elements in the manner contemplated by the claim. See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990). The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. See M.P.E.P. § 2142. To establish a *prima facie* case of obviousness, the Examiner must show, *inter alia*, that there is some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify or combine the references and that, when so modified or combined, the prior art teaches or suggests all of the claim limitations. See M.P.E.P. § 2143. Applicant respectfully submits that these criteria for obviousness are not met here.

Claim 3 ultimately depends on claim 1. Consequently, all claim limitations of amended claim 1 of the present Application that Omatsu does not

teach or suggest (as discussed above in connection with the § 102(b) rejection), are also not taught or suggested with respect to claim 3 of the present Application. Omatsu does not teach internal electrodes composed of a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals, as recited in amended claim 1. Accordingly, claim 3 is not rendered obvious for at least the reasons given for allowability of claim 1. For at least these reasons, withdrawal of the rejection of claim 3 under 35 U.S.C. § 103(a) is hereby respectfully requested.

As further regards claim 3, although Omatsu does not disclose the exact composition of the PZT as recited in claim 3, the Examiner has taken Official Notice that the mechanical and electrical characteristics of different PZT compositions are well known in the related art. Respectfully, Applicants traverse.

First, Applicants disagree that it is "well-known" to have a PZT composition as recited in claim 3 and requests that documentary proof be provided in accordance with MPEP 2144.03. Second, whether it is "well-known" to have various mechanical and electrical characteristics of different PZT compositions is not the issue; the issue is whether it is "well-known" to provide a PZT having the composition as recited in claim 3, i.e., a PZT that includes PB  $(\text{Ti}_x\text{Zr}_{1-x})\text{O}_3$ , where  $0.40 < x < 0.60$ . This, Applicants respectfully assert, is not well known in the related art, and the obviousness conclusion with respect to claim 3 is unwarranted.

### **CONCLUSION**

In light of the foregoing, Applicants respectfully submit that all pending claims are in condition for allowance. Prompt reconsideration and allowance of the present application are therefore earnestly solicited.

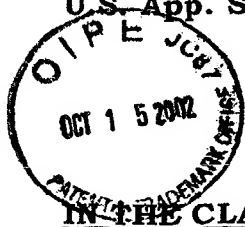
Respectfully submitted,

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**AMENDMENT VERSION WITH MARKINGS****IN THE CLAIMS:**

Without prejudice, please amend claims 1 and 10 as follows:

1. (Amended) A piezoelectric ceramic body comprising:

a plurality of insulating layers situated one over the other, the insulating layers being composed of a piezoactive ceramic material; and

internal electrodes separating at least portions of the insulating layers from each other, at least a part of at least one of the internal electrodes containing a silver-containing material, the material of the at least one internal electrode having a component which at least one of reduces and inhibits a diffusion of silver from the at least one internal electrode into an insulating layer[.];

wherein the internal electrodes include a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals.

10. (Amended) (Amended) [The] A piezoelectric ceramic body [according to claim 9,] comprising:

a plurality of insulating layers situated one over the other, the insulating layers being composed of a piezoactive ceramic material; and

internal electrodes separating at least portions of the insulating layers from each other, at least a part of at least one of the internal electrodes containing a silver-containing material, the material of the at least one internal electrode having a component which at least one of reduces and inhibits a diffusion of silver from the at least one internal electrode into an insulating layer;

wherein the internal electrodes are electrically conductive and are composed of an AgPd alloy;

**AMENDMENT VERSION WITH MARKINGS**

and wherein the internal electrodes are further composed of a PZT ceramic modified by at least one of: rare-earth metals, subgroup elements, alkali metals and alkaline-earth metals.